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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,143	10/20/2003	Cyrille de Brebisson	100204485-1	2787

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

NAMAZI, MEHDI

ART UNIT	PAPER NUMBER
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2189

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,143

Applicant(s)

DE BREBISSEON ET AL.

Examiner

Mehdi Namazi

Art Unit

2189

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-23 and 26 is/are allowed.
- 6) ☒ Claim(s) 1-15, 18, 19 and 25 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/20/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to application filed October 20, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 6, 8-11, 13, 14, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kulkarni et al. (US. Patent No. 5,991,699).

With regard to claims 1, 5, 10, and 24, Kulkarni teaches storing defective data site information for a storage device (col. 8, lines 16-19), the method comprising: determining a first defective data site associated with the storage device (fig.9a, step 154), determining a second defective data site associated with the storage device (fig. 9a, step 154), determining a spacing value that represents spacing between the first defective data site and the second defective data site (col. 15, lines 14-20, calculating the distance between two defects using X, and Y defect position); and storing the spacing value (col. 25, line 10-15; it is a computer program for analyzing the data associated with the defects, therefore the data is saved in order to be analyzed).

With regard to claim 2, Kulkarni teaches determining a difference value (col.15, equation 9).

With regard to claims 3, 11, Kulkarni teaches the first defective data site has a first data site number and the second defective data site has a second data site number (col. 15, lines 25-26), further wherein determining a spacing value comprises determining a difference between the first data site number and the second data site number (col. 15, equation 9).

With regard to claim 6, Kulkarni teaches the differences in location between defective data sites are differences in sector numbers (since the memory is divided into plurality of sectors and if each defect is located on different sector, therefore the distance between two sector is the space value of those two defects).

With regard to claims 8, 13, Kulkarni teaches the storage device comprises a hard drive (fig. 11, element 308).

With regard to claim 9, Kulkarni teaches in combination with a testing controller operably connectable to the storage device for discovering the defective data sites (col. 8, lines 10-11).

With regard to claim 14, the storage device maintains the defect information and is adapted to report the defect information to the host (col. 8, lines 16-19).

Claims 7, 12, 15, 18, 19, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni (US. Patent No. 5,991,699), in view of Hidaka (US. Publication No. 2004/0184315).

With regard to claims 7, and 12, Kulkarni teaches the claimed invention but fails to teach the storage device is a magnetic random access memory (MRAM).

Hidaka teaches a memory device made of thin film magnetic (paragraph 5).

It would have been obvious to one of ordinary skill in the art to modify the work of Kulkarni because Hidaka teaches magnetic random access memory device capable of non-volatile data storage with low power consumption (paragraph 4).

With regard to claims 15, 18, and 25, Kulkarni teaches a method of accommodating a defect in a storage device, the method comprising: discovering a defect in a storage device having spare data sites at generally regular intervals throughout at least a portion of the storage device (fig. 9a, step 154).

Kulkarni teaches the claimed invention but fails to teach determining a plurality of data sites to be remapped, the plurality of data sites to be remapped being disposed between the defect and an adjacent one of the spare data sites; and remapping the plurality of data sites to avoid the defect.

Hidaka teaches a memory array with plurality of memory cells arranged in rows and columns, and spare memory cells for repairing memory cell suffering defect (paragraph 42).

It would have been obvious to one having ordinary skill in the art to modify the work of Kulkarni because Hidaka teaches replacement (remapping) of defective cells with spare cells in order to add more working cells to the memory (paragraph 43).

With regard to claim 19, Kulkarni teaches the spare data site each comprise a sector (since the memory is divided into plurality of sectors and if each defect is located on different sector, therefore the distance between two sector is the space value of those two defects).

Claims 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni (US. Patent No. 5,991,699), in view of Hidaka (US. Publication No. 2004/0184315), and further¹ in view of AAPA (Applicant Admitted Prior Art).

With regard to claim 16, Kulkarni and Hiaka teach the claimed invention but fail to teach the remapping includes evenly shifting data associated with each of the plurality of data sites toward the adjacent spare data site.

AAPA teaches "sector slipping", wherein with sector slipping, the assignment of a logical sector number to a physical sector number skips over the defective sector, and all of the logical sector numbers are "slipped" by one (page 2, lines 28-30).

It would have been obvious to one having ordinary skill in the art to modify the work of Kulkarni and Hidaka, because the AAPA teaches "sector slipping", wherein all of the logical sector numbers are "slipped" by one in order to reduce the access latency of linear replacement mapping (page 2, lines 27-30).

With regard to claim 17, AAPA teaches the adjacent spare data site is a data site nearest the defect (page 2, lines 27-30).

Allowable Subject Matter

Claims 20-23, and 26 are allowed.

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehdi Namazi whose telephone number is 571-272-4209. The examiner can normally be reached on Monday-Friday 8:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mehdi Namazi
February 9, 2006



KEVIN VERBRUGGE
PRIMARY EXAMINER